APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,377	07/01/2003	Mark Edward Kane	3805-016-27 CIP	1196

		EXAMINER
7590	11/03/2005	NGUYEN, CUONG H

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ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 August 2005</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-24</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-24</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>6/03/05</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This Office Action is the answer to the amendment received on 8/23/2005.

2.   Claims 1-24 are pending in this application.
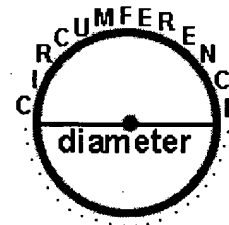
Response

3.   The examiner respectfully submits that it is fundamental to obtain a wheel circumference

by dividing a traveled distance by with the total of wheel revolution (wherein a wheel radius is

equal to a circumference divides to 2π).

A circle is a shape with all points the same distance from the center. It is named by the center. The
circle to the left is called circle A since the center is at point A. If you measure the distance around
a circle and divide it by the distance across the circle through the center, you will always come
close to a particular value, depending upon the accuracy of your measurement. This value is
approximately 3.14159265358979323846... We use the Greek letter π *(pronounced Pi)* to represent
this value. The number π goes on forever. However, using computers, mathematicians have been
able to calculate the value of π to thousands of places.

The distance around a circle is called the **circumference**. The distance across
a circle through the center is called the **diameter**. π is the ratio of the
circumference of a circle to the diameter. Thus, for any circle, if you divide
the circumference by the diameter, you get a value close to π. This
relationship is expressed in the following formula:

$$\frac{C}{d} = \pi$$

where C is circumference and d is diameter. You can test this formula at home with a round dinner
plate. If you measure the circumference and the diameter of the plate and then divide C by d, your
quotient should come close to π. Another way to write this formula is: $C = \pi \cdot d$ where $\cdot$ means
multiply. This second formula is commonly used in problems where the diameter is given and the
circumference is not known.

4.   On page 7, 5th para., and on page 8, 2nd para. (of the REMARKS 8/23/05), the examiner

respectfully submits that Kumar teaches claims 22-23. In response to applicant's argument that

the references fail to show certain features of applicant's invention, it is noted that the features

upon which applicant relies (i.e., "in the specification at page 12, line 9 to page 13, line 11", and

"As explained in the specification at page 8, lines 11-24 and with reference to Figure 4...") are

not recited in the rejected claims 22-23, and claim 1. Although the claims are interpreted in light

of the specification, limitations from the specification are not read into the claims. See *In re Van*

Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office Action:

> *(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.* ·

5.   **Independent claims 1-16, 21 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over Kumar et al. (US Pat. 6,148,269), in view of Matsuno et al. (US Pat.

6,219,609), in view of Bidaud (US Pat. 6,347,265), and further in view of Bingeman (US Pat.

6,446,005).

Since claim 8 is the most sophisticated claim containing many limitations of above

claims, it is analyzed herein, other listed claims are rejected for the same rationales and cited

references because they contain broader limitations or having less limitations covered in claim 8.

A. <u>As for independent claim 8</u>: Kumar et al. suggest a method for determining a size of a wheel

on a train comprising the steps of:

- determining a distance traveled by a train during a period of time by calculating a difference in

positions reported by a positioning system located on the train at a start of the period and an end of

the period;

Kumar et al. do not disclose about adding segments of distance to obtain a total distance;

however, Bingeman teaches that idea (see Bingeman, claim 6).

Kumar et al. do not expressly disclose that distance repeating the determining step a plurality of times; and adding the linear distance for a total distance; however, this is a well-known calculation to obtain a total distance with known sub-distances.

Kumar et al. do not expressly calculating the wheel size based on the total distance and a total number of wheel revolutions; however Bidaud suggests that idea (see Bidaud, col. 3 lines 22-32 – please know that there existed a wheel revolution sensor).

Matsuno et al. use GPS technology to obtain accurate positions and wheel speeds of a train via sensors 110a.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Kumar et al., Matsuno et al., Bidaud, and Bingeman to suggest the use of GPS, and linear segments of a traveled distance to calculate a train wheel size because these have been known and already available technologies <u>to creating more accuracy in calculating a dimension of a train's wheel</u> based on total traveling distance and sensing that wheel total revolutions (i.e., it is fundamental in mathematics to obtain a wheel circumference by dividing a traveled distance by with the total of wheel revolution (wherein a wheel radius – using to determine a size of a train wheel - is equal to a circumference divides to 2π)).

B. <u>As for dependent claims 2, and 9</u>:

The rationale and references for above rejection of claim 8 are incorporated.

The examiner respectfully submits that it is clearly obvious with above references a determining step is performed successively with no separation between each period (e.g., a continuously distance).

C. <u>As for dependent claims 3, and 10</u>:

The rationale and references for above rejection of claim 8 are incorporated.

The examiner respectfully submits that it is clearly obvious with above references a determining step is performed successively with separations between each period (i.e., similar in claim 8's situations).

D. As for dependent claims 5, and 12:

The rationale and references for above rejection of claim 8 are incorporated.

The examiner respectfully submits that it is clearly obvious with above references that a determining step is performed successively with no separation between each period (e.g., a continuously distance with "no portion of a distance having a grade exceeding a grade threshold").

E. As for dependent claims 6, and 13:

The rationale and references for above rejection of claim 8 are incorporated.

The examiner respectfully submits that it is obvious with above references that a determining step is performed with known grades from a track database, in another word, those known elevations/grades would be used in calculations.

F. As for dependent claims 7, and 14:

The rationale and references for above rejection of claim 8 are incorporated.

The examiner respectfully submits that it is clear with above cited references that an exemplary case is when period is one second (sufficiently equivalent for "a continuous situation").

G. As for dependent claims 7, and 14:

The rationale and references for above rejection of claim 8 are incorporated.

The examiner respectfully submits that it is clearly obvious with above references that a determining step is performed in "ordinary situation" <u>without exceeding any threshold</u> (this is equivalent with what claim).

H. <u>As for dependent claims 17-20</u>:

The rationale and references for above rejection of claim 8 are incorporated.

The examiner respectfully submits that Bidaud uses a tachometer for sensing rotational speed because it is fundamental that "tachometer" is an instrument that indicates the speed, usually in revolutions per minute, at which an engine shaft is rotating. Some tachometers, especially those used in automobiles, are similar in construction and operation to automotive speedometers. Other types, often connected directly to the shaft whose speed they indicate, are small electric generators whose output voltage is proportional to speed. This voltage is applied to a voltmeter whose dial is calibrated in speed units. Another type, used only with engines having an ignition system, operates by counting the pulsations of current or voltage in the ignition system, the number of these being proportional to the speed of the shaft.

I. <u>As for dependent claims 22-24</u>:

The rationale and references for above rejection of claim 8 are incorporated.

The examiner respectfully submits that these addition steps are well-known:

- determining an average speed of a train by dividing a total travel distance to a total travel time;

- determining a parameter (i.e., a pulse fof a signal that would be output by a wheel sensor (e.g., taking into account a coefficient factor from rotation sensor – e.g., US Pat. 5,796,613).

- speed of the train is obtained from the positioning system (see also the technique of using

Doppler radar for monitoring speed US Pat. 6,373,403).

As to amended dependent claim 24: It is directed to steps of determine speed of the train using a

wheel size determined by:

- determining a linear distance traveled by a train during a period of time by calculating difference in

positions reported by a positioning system located on the train at a start of the period and an end of

the period (this limitation is equivalent to a step of using GPS to calculate a travel distance, marking

a travel duration from point A to point B):

- repeating the determining step a plurality of times (it is well-known that the more repetitions, the

better accuracy in estimation):

-           adding the linear distance from each of the determining steps to form a total distance; and

-           calculating the wheel size based on the total distance and a total number of wheel

revolutions occurring during each of the determining steps.

-           Above analyzed claim 8 already covers rationales and references to calculate a wheel size

as claimed (merely adding segments together to obtain a total distance, merely adding together to

obtain a total wheel revolutions); therefore, similar rationales and references are applied for an

obvious rejection as claim 8.

Conclusion

6.   Claims 1-24 are not patentable. The arguments are not persuasive; accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.
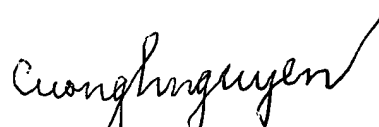
7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to CUONG H. NGUYEN whose telephone number is 571-272-6759. The examiner can normally be reached on 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, THOMAS G. BLACK can be reached on 571-272-6956. The Rightfax number for the organization where this application is assigned is 571-273-6956.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Please provide support, with page and line numbers, for any amended or new claim in

an effort to help advance prosecution; otherwise any new claim language that is introduced in

an amended or new claim may be considered as new matter, especially if the Application is a

Jumbo Application.

CUONG H. NGUYEN
Primary Examiner
Art Unit 3661